We Claim:

1. An instrument for tamping material into bone through a subcutaneous path, the instrument comprising a body having a length and a terminus, and including markings located along the length at increments from the terminus.

2. An instrument according to claim 1 wherein the body is made of a generally rigid material.

3. An instrument according to claim 1 wherein the length of the body is longer than the subcutaneous path.

4. An instrument according to claim 1 wherein the body includes at least one radiopaque marker.

5. A tamping instrument capable of advancement through a subcutaneous cannula having a distal end which leads into bone, the tamping instrument comprising a body having a terminus which, during the advancement, urges material residing in the cannula into bone, the body having markings to visually gauge the advancement of the terminus through the subcutaneous cannula.

6. A tamping instrument according to claim 5 wherein the body is made of a generally rigid material.

7. A tamping instrument according to claim 5 wherein the length of the body is longer than the subcutaneous cannula.

8. A tamping instrument according to claim 5 wherein the body includes at least one radiopaque marker.

9. Apparatus for delivering material into bone comprising

a cannula for establishing a subcutaneous path into bone, and

a tamping instrument for advancement through the

cannula comprising a body having a terminus which, during the advancement, urges material residing in the cannula into bone.

10. Apparatus according to claim 9

wherein the body includes markings to visually gauge the advancement of the terminus through the cannula.

11. Apparatus according to claim 9

wherein the cannula has a length, and

wherein the length of the tamping instrument exceeds the length of the cannula.

12. Apparatus according to claim 11

wherein the body includes a set point marking spaced from the terminus at a distance generally equal to the length of the cannula.

13. Apparatus according to claim 12

wherein the body includes at least one additional marking to visually gauge advancement of the terminus through the cannula.

14. Apparatus according to claim 9

wherein the body includes at least one radiopaque marker.

15. Apparatus according to claim 9

wherein the body is made of a generally rigid material.

16. Apparatus according to claim 9

and further including a cavity forming instrument for advancement through the cannula into bone for compressing cancellous bone.

17. Apparatus according to claim 16

wherein the cavity forming instrument includes an expandable structure.

18. An assembly of items

for delivering material into bone comprising

a cannula,

a tamping instrument comprising a body having a

terminus, and

instructions for using the kit according to a method comprising the steps of

deploying the cannula to establish a subcutaneous path into bone,

introducing a material into bone through the cannula, and

advancing the terminus through the cannula to urge material residing in the cannula into bone.

19. An assembly according to claim 18

wherein the body has a length and includes markings located along the length at increments from the terminus to gauge advancement of the terminus through the cannula.

20. An assembly according to claim 18

wherein the body includes at least one radiopaque marker.

21. An assembly according to claim 18

and further including a cavity forming instrument to compress cancellous bone.

22. An assembly according to claim 21

wherein the cavity forming instrument includes an expandable structure.

23. An assembly according to claim 21

wherein the method further comprises the step of deploying the cavity forming instrument through the cannula to compress cancellous bone and form a cavity, and

wherein the introducing and advancing steps introduces material into the cavity.

24. Apparatus for introducing material into bone through a subcutaneous cannula, the apparatus including a delivery device to convey the material at a delivery pressure of no greater than about 360 psi, and a nozzle instrument capable of advancement through the subcutaneous cannula into bone and comprising a proximal fitting to

couple the nozzle instrument to the delivery device and a nozzle terminus through which the material conveyed by the delivery device enters bone at the delivery pressure.

25. Apparatus according to claim 24

wherein the nozzle instrument is made of a generally flexible material.

26. Apparatus according to claim 24

wherein the nozzle instrument is made of a generally rigid material.

27. Apparatus according to claim 24

wherein the delivery device comprises a syringe.

28. Apparatus according to claim 24 and further including a tamping instrument capable of advancement through the subcutaneous cannula and having a tamping terminus which, during the advancement, urges material residing in the subcutaneous cannula into bone.

29. Apparatus according to claim 28

wherein the tamping instrument includes markings to visually gauge the advancement of the tamping terminus through the subcutaneous cannula.

30. Apparatus according to claim 28

wherein the tamping instrument includes at least one radiopaque marker.

31. Apparatus according to claim 28

wherein the tamping instrument is made of a generally rigid material.

32. Apparatus according to claim 24

wherein the nozzle instrument includes markings to visually gauge the advancement of the nozzle terminus through the subcutaneous cannula.

33. Apparatus according to claim 24

wherein the nozzle instrument includes at least one radiopaque marker.

34. Apparatus according to claim 24 and further including a cavity forming instrument capable of advancement

through the subcutaneous cannula to compress cancellous bone.

35. Apparatus according to claim 34

wherein the cavity forming instrument includes an expandable structure.

36. An assembly of items for introducing material into bone comprising

a cannula,

a delivery device having an actuator to convey material at a delivery pressure of no greater than about 360 psi,

a nozzle instrument capable of advancement through the cannula into bone and comprising a proximal fitting to couple the nozzle instrument to the delivery device and a nozzle terminus, and

instructions for using the kit according to a method comprising the steps of

deploying the cannula to establish a subcutaneous path into bone, and

actuating the delivery device to convey material at the delivery pressure through the nozzle terminus into bone.

37. An assembly according to claim 36 and further including a tamping instrument capable of advancement through the cannula having a tamping terminus, and

wherein the method further includes the step of advancing the tamping terminus through the cannula to urge material residing in the cannula into bone.

38. An assembly according to claim 37

wherein the tamping instrument includes markings to visually gauge the advancement of the tamping terminus through the cannula.

39. An assembly according to claim 37

wherein the tamping instrument includes at least

one radiopaque marker.

40. An assembly according to claim 36

wherein the nozzle instrument includes markings to visually gauge the advancement of the nozzle terminus through the cannula.

41. An assembly according to claim 36

wherein the nozzle instrument includes at least one radiopaque marker.

42. An assembly according to claim 36

wherein the delivery device comprise a syringe.

43. An assembly according to claim 36 and further including a cavity forming instrument to compress cancellous bone.

44. An assembly according to claim 43

wherein the cavity forming instrument includes an expandable structure.

45. An assembly according to claim 43

wherein the method further comprises the step of deploying the cavity forming instrument through the cannula to compress cancellous bone and form a cavity, and

wherein the actuating step conveys material into the cavity.

46. A tool for deployment into bone comprising

a catheter tube having a distal region,

an expandable structure carried by the distal region for compacting cancellous bone, and

an introducer sleeve slidably carried by the catheter tube for movement between a retracted position spaced from the expandable structure and an advanced position overlying the expandable structure, the introducer sleeve including

a tubular main body dimensioned to compress the expandable structure when the introducer sleeve is in the advanced position, and

a collar extending beyond the distal region

of the catheter tube when the introducer sleeve is in the advanced position, the collar being dimensioned larger than the tubular main body to releasably engage an end of a cannula, whereby the introducer sleeve both sizes and aligns the expandable structure for passage into the cannula through the end of the cannula.

47. A tool according to claim 46

wherein the catheter tube includes a proximal region having a stem, and

wherein the introducer sleeve includes a second collar extending from the main tubular body opposite to the first-defined collar, the second collar being dimensioned to releasably engage the stem when the introducer sleeve is in the retracted position.

48. A tool according to claim 47

wherein the proximal region includes a handle adjacent to the stem.

49. A tool according to claim 46

wherein the catheter tube includes a proximal region having a handle, and

wherein the introducer sleeve includes a second collar extending from the main tubular body opposite to the first-defined collar, the second collar being dimensioned to releasably engage the handle when the introducer sleeve is in the retracted position.

50. Apparatus for introducing material into bone through a subcutaneous cannula, the apparatus including a delivery device to convey the material at a delivery pressure of no greater than about 360 psi, a nozzle instrument capable of advancement through the subcutaneous cannula into bone and comprising a proximal fitting to couple the nozzle instrument to the delivery device and a nozzle bore through which the material conveyed by the delivery device enters bone at the delivery pressure, and a stylet capable of advancement into the nozzle bore through

the proximal fitting to close the nozzle bore and, with the nozzle instrument, forming a tamping instrument capable of advancement through the subcutaneous cannula to urge residual material from the subcutaneous cannula.

51. Apparatus according to claim 50

wherein the nozzle instrument includes markings to visually gauge the advancement of the nozzle instrument through the cannula.

52. Apparatus according to claim 50

wherein the delivery device comprises a syringe.

53. A method for delivering material into bone comprising the steps of

deploying a cannula through soft tissue to establish a subcutaneous path into bone,

introducing a material into bone through the cannula, and

advancing a tamping instrument through the cannula to urge material residing in the cannula into bone.

54. A method according to claim 53

wherein the introducing step delivers material at a pressure no greater than about 360 psi.

55. A method according to claim 53

wherein the introducing step includes using a manual syringe.

56. A method according to claim 53

wherein the material comprises bone cement.

57. A method according to claim 53

wherein the material comprises autograft tissue.

58. A method according to claim 53

wherein the material comprises allograft tissue.

59. A method according to claim 53

wherein the material comprises synthetic bone substitute.

60. A method according to claim 53

wherein the material comprises medication.

61. A method according to claim 53 wherein the material comprises a material that sets to a hardened condition.

62. A method according to claim 53 and further including the step of deploying a cavity forming instrument through the cannula to compress cancellous bone and form a cavity, and wherein the introducing and advancing steps convey material into the cavity.

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